

**CLAIMS:**

What is claimed is:

1. A method, in a data processing system, for detecting fraud, the method comprising:
  - receiving a set of historical data;
  - identifying a plurality of control points in the historical data;
  - providing at least one data model based on the plurality of control points;
  - receiving a set of updated data;
  - identifying one or more new control points based on the updated data;
  - adjusting the at least one data model based on the one or more new control points;and
  - verifying a transaction based on the adjusted data model.
2. The method of claim 1, wherein the historical data includes at least one of demographic data, psychographic data, transactional data, and environmental data.
3. The method of claim 1, wherein identifying a plurality of control points includes:
  - identifying a plurality of outliers in a distribution of the historical data;
  - validating the plurality of outliers; and
  - categorizing the plurality of outliers as valid or invalid.
4. The method of claim 3, wherein the control points are valid outliers.
5. The method of claim 3, wherein the control points are invalid outliers.

6. The method of claim 1, wherein the at least one data model includes a fence that passes through the plurality of control points, wherein data points within the fence represent acceptable behavior and data points outside the fence represent unacceptable behavior.

7. The method of claim 1, wherein the updated data includes at least one of demographic data, psychographic data, transactional data, and environmental data.

8. The method of claim 1, wherein adjusting the data model includes adding the one or more new control points to the data model.

9. The method of claim 1, wherein adjusting the data model includes changing one or more of the plurality of control points to the one or more new control points in the data model.

10. The method of claim 1, further comprising:  
determining whether a given data model, within the at least one data model, reaches a steady state; and  
converting the given data model to a static model if the given data model reaches a steady state.

11. The method of claim 10, wherein determining whether a given data model reaches a steady state includes:  
determining a difference between an adjusted data model and an original data model to form a delta value; and  
determining whether the delta value is less than a threshold.

12. The method of claim 11, wherein the threshold is two standard deviations from a mean within a normal distribution of the data.

13. A computer program product, in a computer readable medium, for detecting fraud, the computer program product comprising:

- instructions for receiving a set of historical data;
- instructions for identifying a plurality of control points in the historical data;
- instructions for providing at least one data model based on the plurality of control points;
- instructions for receiving a set of updated data;
- instructions for identifying one or more new control points based on the updated data;
- instructions for adjusting the at least one data model based on the one or more new control points; and
- instructions for verifying a transaction based on the adjusted data model.

14. The computer program product of claim 13, wherein the historical data includes at least one of demographic data, psychographic data, transactional data, and environmental data.

15. The computer program product of claim 13, wherein the instructions for identifying a plurality of control points include:

- instructions for identifying a plurality of outliers in a distribution of the historical data;
- instructions for validating the plurality of outliers; and
- instructions for categorizing the plurality of outliers as valid or invalid.

16. The computer program product of claim 15, wherein the control points are valid outliers.
17. The computer program product of claim 15, wherein the control points are invalid outliers.
18. The computer program product of claim 13, wherein the at least one data model includes a fence that passes through the plurality of control points, wherein data points within the fence represent acceptable behavior and data points outside the fence represent unacceptable behavior.
19. The computer program product of claim 13, wherein the updated data includes at least one of demographic data, psychographic data, transactional data, and environmental data.
20. The computer program product of claim 13, wherein the instructions for adjusting the data model include instructions for adding the one or more new control points to the data model.
21. The computer program product of claim 13, wherein the instructions for adjusting the data model include instructions for changing one or more of the plurality of control points to the one or more new control points in the data model.
22. The computer program product of claim 13, further comprising:  
instructions for determining whether a given data model, within the at least one data model, reaches a steady state; and

instructions for converting the given data model to a static model if the given data model reaches a steady state.

23. The computer program product of claim 22, wherein the instructions for determining whether a given data model reaches a steady state include:

instructions for determining a difference between an adjusted data model and an original data model to form a delta value; and

instructions for determining whether the delta value is less than a threshold.

24. The computer program product of claim 23, wherein the threshold is two standard deviations from a mean within a normal distribution of the data.

25. An apparatus for detecting fraud, the apparatus comprising:

means for receiving a set of historical data;

means for identifying a plurality of control points in the historical data;

means for providing at least one data model based on the plurality of control points;

means for receiving a set of updated data;

means for identifying one or more new control points based on the updated data;

means for adjusting the at least one data model based on the one or more new control points; and

means for verifying a transaction based on the adjusted data model.